

Code No: R32054

**R10****Set No: 1**

III B.Tech. II Semester Regular and Supplementary Examinations, May/June -2014

**UNIX PROGRAMMING**

(Common to CSE and IT)

**Time: 3 Hours****Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. Explain about the following UNIX utilities: mv, rmdir, rlogin and cmp. [15]
2. a) Discuss about the meta characters in UNIX shell. [7]  
b) Write a shell script to display first n numbers of Fibonacci series. [8]
3. a) Brief on UNIX file structure. [7]  
b) Explain about open, read, write and close file operations in UNIX. [8]
4. Brief on at least 5 UNIX process management system calls. [15]
5. a) Discuss about interrupted system calls. [7]  
b) Explain in detail about abort and sleep functions in detail. [8]
6. a) Explain the advantages of FIFOs over pipes. [5]  
b) Write a C program to demonstrate the working of bidirectional communication with pipes. [10]
7. Explain with a program, the concept of requesting and releasing a file lock using semaphores. [15]
8. a) Briefly explain the operation of listen and accept system calls. [6]  
b) List and explain the system calls associated with UDP (connection less) communication. [9]

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1. a) Brief the features of UNIX. [7]  
b) Explain the UNIX backup utilities. [8]
2. a) Explain about different conditional expressions available in Bourne shell. [7]  
b) Write a shell script to find the sum of first n positive numbers. [8]
3. Explain about the following system calls: lseek, stat, symlink and closedir. [15]
4. a) What is a zombie process? Why they are created? How to handle them? [7]  
b) Explain in detail about exec system call with emphasis on the types of parameters supplied to the system call. [8]
5. a) Discuss in detail about unreliable signals. [7]  
b) Explain about kill and raise functions. [8]
6. Explain in detail about streams, messages and namespaces with respect to UNIX IPC. [15]
7. a) List and explain different system calls associated with message queues. [8]  
b) Explain the kernel data structure for semaphore set. [7]
8. a) What is a socket? Present a detailed note on socket addressing. [7]  
b) Detail on socket and socketpair system calls. [8]

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1. Explain about the following UNIX utilities: ln, finger, grep and tee. [15]
2. a) Explain about pipes and input redirection in UNIX shells. [7]  
b) Write a shell script to find whether a given integer is prime or not. [8]
3. a) With an example explain the difference between fgetc and getc system calls. [7]  
b) Discuss about various directory handling system calls. [8]
4. a) Explain the operation of fork and vfork system calls in detail. [8]  
b) Write in brief about UNIX process structure. [7]
5. a) Distinguish between reliable and unreliable signals [7]  
b) Explain in about alarm and pause functions. [8]
6. Briefly discuss about different forms of Inter Process Communication methods available in modern UNIX systems. [15]
7. a) Explain the procedure to create and open a UNIX IPC channel. [8]  
b) Distinguish between file locking and record locking. [7]
8. With sample code snippets explain the TCP connection management in UNIX systems. [15]

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Answer any FIVE Questions  
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1. Explain about the following UNIX utilities: find, ps, rmdir and fgrep. [15]
2. a) Explain about built-in variables of UNIX shell. [7]  
b) Write a shell program to find the maximum of a given three integers. [8]
3. a) Explain the following terms with respect to UNIX file system: file, directory and device. [7]  
b) Write in brief about any 4 standard I/O system calls. [8]
4. a) What is a daemon process? What command displays the daemons running in a UNIX system? [7]  
b) With an example explain the difference between wait and waitpid system calls. [8]
5. a) Write a detailed note on SIGCHLD and SIGKILL signals. [7]  
b) With a program explain how to handle SIGCHLD signal in a UNIX system. [8]
6. a) Write a C program to demonstrate the working of bidirectional communication with FIFOs. [10]  
b) Brief the method of UNIX inter process communication; when the communicating processes are on different machines. [5]
7. a) List and explain the system calls associated with semaphores. [8]  
b) Differentiate between Advisory locking and Mandatory locking. [7]
8. Explain with detailed description the following system calls: connect, listen accept, send and recv. [15]

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